

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for forming a porous thin film, comprising the step of forming on a substrate a composite thin film in which metal portions composed of a first metal component that is elemental metal and metal compound portions composed of a compound of a second metal component different from said first metal component are randomly distributed together, and then, removing only said metal portions from said composite thin film,

wherein said composite thin film is formed by arranging a metal target composed of said first metal component and a metal compound target composed of said compound of said second metal component different from said first metal component in a chamber, and simultaneously and independently applying electric powers to said targets to perform sputtering, and

wherein said first metal component is at least one metal selected from the group consisting of Zn, Cr, Al, Cu, Si, Ti, Ag, Mn, Fe, Co, Cd, Ni, Zr, Nb, Mo, In, Sn, Sb, Hf, Ta, W, and Mg, and said second metal component is at least one metal different from said first metal component and selected from said group.

2. (Canceled).

3. (Previously Presented): A method for forming a porous thin film according to claim 1, wherein said metal compound is a metal oxide, metal nitride or metal oxynitride.

4. (canceled).

5. (Previously Presented): A method for forming a porous thin film according to claim 1, wherein said first metal component is at least one metal selected from the group consisting of Zn, Cr, Al, Cu, Si, Ti, Ag, Mn, Fe, Co, Cd, Ni, Zr, Nb, Mo, In, Sn, Sb, Hf, Ta, W, and Mg, and said second metal component is at least one metal different from said first metal component and selected from the group consisting of Zn, Ti, Nb, In, Sn, Sb and W.

6. (Previously Presented): A method for forming a porous thin film according to claim 1, wherein said first metal component is at least one metal selected from the group consisting of Zn, Cr, Al, Cu, Si, Ag, Mn, Fe, Co, Cd, Ni, Zr, Nb, Mo, In, Sn, Sb, Hf, Ta, W, and Mg, and said second metal component is Ti.

7. (Previously Presented): A method for forming a porous thin film according to claim 1, wherein said first metal component and second metal component are in such a combination that only said metal portions can be dissolved out of said composite thin film in an aqueous acid solution or aqueous alkali solution.

8. (Original): A method for forming a porous thin film according to claim 7, wherein said removal of said metal portions comprises dissolving said metal portions with said aqueous acid solution or aqueous alkali solution.

9. (Previously Presented): A method for forming a porous thin film according to claim 1, further comprising the step of conducting baking after said metal portions are removed.

10. (currently amended): A method for forming a porous thin film, comprising the step of forming on a substrate a composite thin film in which first metal portions composed of a first metal component that is elemental metal and second metal portions composed of a second metal component different from said first metal component are randomly distributed together, and then, removing only one metal portions of said first metal portions and said second metal portions from said composite thin film,

wherein said composite thin film is formed by arranging a first metal target composed of said first metal component and a second metal target composed of said second metal component different from said first metal component in a chamber, and simultaneously and independently applying electric powers to said targets to perform sputtering, and

wherein said first metal component is at least one metal selected from the group consisting of Pt, Ru, Ir, Rh, Zn, Cr, Al, Cu, Si, Ti, Ag, Mn, Fe, Co, Cd, Ni, Zr, Nb, Mo, In, Sn, Sb, Hf, Ta, W, and Mg, and said second metal component is at least one metal different from said first metal component and selected from said group.

11. (Canceled).

12. (canceled).

13. (Previously Presented): A method for forming a porous thin film according to claim 10, wherein said first metal component and second metal component are in such a combination that said metal portions of only one metal component can be dissolved out of said composite thin film in an aqueous acid solution or aqueous alkali solution.

14. (Original): A method for forming a porous thin film according to claim 13, wherein said removal of said metal portions comprises dissolving only one metal portions of said first metal portions and second metal portions with said aqueous acid solution or aqueous alkali solution.

15. (Previously Presented): A method for forming a porous thin film according to claim 1, wherein said composite thin film is formed by rotating the substrate.

16. (Previously Presented): A method for forming a porous thin film according to claim 10, wherein said composite thin film is formed by rotating the substrate.

17. (Previously Presented): A method for forming a porous thin film according to claim 1, further comprising electric power applied to the targets.

18. (Previously Presented): A method for forming a porous thin film according to claim 10, further comprising altering the electric power applied to the targets.

19. (Previously Presented): A method for forming a porous thin film according to claim 1, further comprising arranging the targets as rectangular targets that are in inclined positions at predetermined angles.

20. (Previously Presented): A method for forming a porous thin film according to claim 10, further comprising arranging the targets as rectangular targets that are in inclined positions at predetermined angles.